AMENDMENTS TO THE CLAIMS

Please amend claims 1, 7, 11, 29, 32, and 36 and cancel claims 2 and 13, such that the status of the claims is as follows:

1. (Currently amended) A tunneling magnetoresistive stack comprising:

a first ferromagnetic layer;

a tunnel barrier layer comprising a titanium alloy oxide on the first ferromagnetic layer; and

a second ferromagnetic layer on the tunnel barrier layer, wherein the tunneling magnetoresistive stack exhibits a negative exchange coupling between the first ferromagnetic layer and the second ferromagnetic layer.

2. (Canceled)

3. (Original) The tunneling magnetoresistive stack of claim 2, wherein the oxidized titanium alloy includes a dopant.

4. (Original) The tunneling magnetoresistive stack of claim 3, wherein the dopant is an element of the group consisting of Nb, Cr, Mo, P, Si, V, W, B, and Co.

5. (Original) The tunneling magnetoresistive stack of claim 2, wherein the oxidized titanium alloy includes an oxide of a metal of the group consisting of aluminum, zirconium, and halfnium.

6. (Original) The tunneling magnetoresistive stack of claim 1, wherein the tunnel barrier layer also comprises a dopant.

7. (Currently amended) The tunneling magnetoresistive stack of claim 1, wherein the tunnel barrier layer comprises $Ti_xAl_yO_z$, wherein x, y, and z are greater than zero.

8. (Original) The tunneling magnetoresistive stack of claim 1, wherein the tunnel barrier layer comprises a combination of titanium, aluminum, and oxygen as represented in FIG. 6 as the line from TiO_2 to Al_2O_3.

9. (Original) The tunneling magnetoresistive stack of claim 1, wherein the first ferromagnetic layer is a pinned layer.

10. (Original) The tunneling magnetoresistive stack of claim 1, wherein the second ferromagnetic layer is a free layer.

11. (Currently amended) A tunneling magnetoresistive stack comprising:

a first ferromagnetic layer;

a second ferromagnetic layer; and

a tunnel barrier layer between the first and second ferromagnetic layers, wherein the tunnel barrier layer is an oxide of a titanium alloy, and wherein the tunneling magnetoresistive stack exhibits a negative exchange coupling between the first ferromagnetic layer and the second ferromagnetic layer.

12. (Original) The tunneling magnetoresistive stack of claim 11, wherein the oxide of a titanium alloy includes aluminum.

13. (Canceled)

14. (Original) The tunneling magnetoresistive stack of claim 11, wherein the first ferromagnetic layer and the second ferromagnetic layer each have a thickness in the range of 10Å to 200Å.

15. (Original) The tunneling magnetoresistive stack of claim 11, wherein the tunnel barrier layer has a thickness less than 30Å.

16. (Original) The tunneling magnetoresistive stack of claim 11, wherein the tunnel barrier includes a dopant.

17. (Original) The tunneling magnetoresistive stack of claim 16, wherein the dopant is an element of the group consisting of Nb, Cr, Mo, P, Si, V, W, B, and Co.

18-28. (Canceled)

29. (Currently Amended) A tunneling magnetoresistive stack comprising:

a first ferromagnetic layer <u>having a first magnetization direction</u>;

a second ferromagnetic layer <u>having a second magnetization direction opposite the first magnetization direction</u>; and

a tunnel barrier layer between the first and second ferromagnetic layers, wherein the tunnel barrier layer is an oxide, nitride or oxynitride <u>of a titanium alloy</u> ~~including a dopant~~.

30. (Previously presented) The tunneling magnetoresistive stack of claim 29, wherein the tunnel barrier layer is a doped titanium alloy oxide.

31. (Previously presented) The tunneling magnetoresistive stack of claim 30, wherein the titanium alloy

oxide includes an oxide of a metal of the group consisting of aluminum, zirconium, and halfnium.

32. (Currently amended) The tunneling magnetoresistive stack of claim 29, wherein the tunnel barrier layer comprises $Ti_xAl_yO_z$, wherein x, y, and z are greater than zero.

33. (Previously presented) The tunneling magnetoresistive stack of claim 29, wherein the magnetoresistive stack exhibits a negative exchange coupling between the first ferromagnetic layer and the second ferromagnetic layer.

34. (Previously presented) The tunneling magnetoresistive stack of claim 29, wherein the first ferromagnetic layer and the second ferromagnetic layer each have a thickness in the range of 10Å to 200Å.

35. (Previously presented) The tunneling magnetoresistive stack of claim 29, wherein the tunnel barrier layer has a thickness less than 30Å.

36. (Currently amended) The tunneling magnetoresistive stack of claim 29, ~~wherein~~ further comprising a ~~the~~ dopant ~~is~~ selected from ~~an element of~~ the group consisting of Nb, Cr, Mo, P, Si, V, W, B, and Co.

37. (Previously presented) The tunneling magnetoresistive stack of claim 29, wherein the first ferromagnetic layer is a pinned layer.

38. (Previously presented) The tunneling magnetoresistive stack of claim 29, wherein the second ferromagnetic layer is a free layer.